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352

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10/07/91

☒ This application has been examined ☒ Responsive to communication filed on 7/18/91 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 6-8, 11-19 are pending in the application.
Of the above, claims 6-8 are withdrawn from consideration.
2. ☒ Claims 1-5, 9-10 have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 11-19 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable, ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction, filed on 7/18/1991, has been ☒ approved. ☐ disapproved (see explanation).
12. ☒ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☒ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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Applicant's election of Group I in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (M.P.E.P. § 818.03(a)).

Claims 6-8 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected invention. Election was made without traverse in Paper No. 8.

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on July 18, 1991 have been approved.

Applicant is reminded that the Patent and Trademark Office no longer makes drawing changes and that it is applicant's responsibility to ensure that the drawings are corrected in accordance with the instructions set forth in Paper No.9, mailed on January 18, 1991.

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The claims are drawn to a flywheel, however, the title is drawn to a crankshaft assembly.

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The Information Disclosure Statement filed on September 20, 1991 has been considered. However, the extent to which the Japanese document has been considered is substantially limited due to lack of a complete translation.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 11-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

No clear antecedent basis is seen for the terms such as "said elastic member" in claims 11, 14, 16-19; "the crankshaft assembly" in claim 13; and "the secured portion in which said elastic plate (2) is secured to said crankshaft (1)" in claims 16-19.

It is unclear whether:

(a) a confusing variety of terms such as: (1) "A flywheel (5)", "a flywheel body (5)" in claims 11, 14 and 16-19; (2) "a crankshaft" and "the crankshaft assembly" in claim 13; and (3) "a secured portion" and "the secured portion" in claims 16-19 refer to the same or different structures, See MPEP 608.01(o);

(b) claims 11-17 call for a flywheel per se, or a combination of a flywheel, a power transmission system and a driven unit. See the "so as" clause in claims 11 and 15-17.

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Claim 13 is improperly grouped with claim 11 because claim 11 calls for "A flywheel"; however, claim 13 calls for "The crankshaft assembly". See 37 CFR 1.75(g).

Claims 17 and 19, as best understood, are rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent Publication No. 57-58,542 (hereinafter Pub. '542).

Regarding claim 17, Pub. '542 teaches an elastic plate 3 secured to a crankshaft 1, a flywheel body 9 secured at a secured portion to the elastic plate 3 and having an engageable surface (at 9 in Fig. 3) which is engageable with a clutch disc 11, and a reinforcing member 24 for reinforcing the plate 3 at the secured portion at which the plate 3 is secured to the shaft 1. The reinforcing member 24 covers the openings 2 and defines a space between the plate 3 and the flywheel 9 as seen in Fig. 4. See pages 1 and 2 of applicant's specification. Further, the plate 3 has a predetermined axial rigidity as admitted by applicant in lines 2-21 on page 2 of the specification. The functional statement in "so as" clause cannot serve to distinguish^o claims from reference since it does not define any structure. In re Mason, 114 USPQ 127^o (CCPA 1957).

Regarding claim 19, see regarding claim 17 supra. Further, the engageable surface of the flywheel 9 inherently has a predetermined axial run-out in order to engage and disengage with the clutch disc 11 as admitted by applicant in the last paragraph


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
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on page 2 of the specification.

Claims 11-16, and 18, as best understood, are rejected under 35 U.S.C. § 103 as being unpatentable over Pub. '542.

Regarding claims 11-16 and 18, Pub. '542 discloses the invention substantially as claimed. However, Pub. '542 does not disclose the range of the axial  rigidity of the plate such as 600 kg/mm - 2200 kg/mm, or the range of the axial run-out of the engageable surface such as no more than 0.1 mm.

It is common knowledge in the prior art to choose the optimum range of the axial rigidity of the plate and the axial run-out of the engageable surface in order to improve the efficiency of the crankshaft assembly.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the range of the axial rigidity of the plate ^{or}  the axial run-out of the engageable surface as claimed in order to improve the efficiency of the crankshaft.

Claims 17 and 19, as best as understood, are rejected under 35 U.S.C. § 102(b) as being anticipated by Luigi (E.P.O. # 0,048,563).

Regarding claims 17, and 19, Luigi teaches elastic plate 11, crankshaft 13, flywheel body 12, engageable surface which is engageable with clutch disc 16, and reinforcing member, i.e., the washer for the screw 15 in Fig. 1. Luigi's reinforcing member is

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similar to applicant's reinforcing members 7. Moreover, Luigi's reinforcing member is positioned at the secured portion in which the plate 11 is secured to the shaft 13 and defined an open space between the plate 11 and the body 12 as applicant claimed. The plate 11 inherently has a predetermined axial rigidity because it is made of metal. Further, the engageable surface inherently has an axial run-out in order to engage and disengage the clutch 16.

Claims 11-16 and 18, as best understood, are rejected under 35 U.S.C. § 103 as being unpatentable over Luigi.

Regarding claims 11-16 and 18, Luigi discloses the invention substantially as claimed. However, Luigi does not disclose the range of the axial rigidity of the plate such as 600 kg/mm - 2200 kg/mm, or the range of the axial run-out of the engageable surface such as no more than 0.1 mm.

It is common knowledge in the prior art to choose the optimum range of the axial rigidity of the plate, or ^{the} axial run-out of the engageable surface in order to improve the efficiency of the crankshaft assembly.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the range of the axial rigidity of the plate, or the axial run-out of the engageable surface of Luigi as claimed in order to improve the efficiency of the crankshaft.

Applicant's arguments filed on July 18, 1991 have been

fully considered but they are not deemed to be persuasive.

Applicant contends inter alia that Pub. '542 fails to disclose or suggest that: (1) the elastic disc 3 has an axial rigidity in the range of 600 kg/mm to 2,200 kg/mm; (2) the engagable surface has an axial run-out equal to or less than 0.1 mm; (3) the elastic plate should have an axial rigidity which is sufficient to transmit torque; and (4) the engageable surface of a flywheel body should have a predetermined run-out to ensure smooth engagement with the clutch disc. The examiner respectfully dissents from these contentions.

First, these contentions ignore the fact that the prior art does not need to explicitly suggest something that are within common knowledge of one having ordinary skill in the art such as the determination of the optimum range of the axial rigidity of the elastic plate or the axial run-out of the engageable surface in the instant case. In re Bozek, 163 USPQ 545,549 (CCPA 1969); In re Opprecht, 12 USPQ 2d 1235 (CCPA 1989).

Second, these contentions overlook a well-established rule that "similar structures would behave similarly". In re King, 231 USPQ 136 (CAFC 1986). In this case, the elastic plate 3 of Pub. '542 is secured to the flywheel 9 in order to transmit torque in the same manner as applicant's elastic plate. Therefore, the plate of Pub. '542 inherently has sufficient axial rigidity in the same manner as applicant's plate, otherwise, the

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device of Pub. '542 would be inoperative for its intended purposes. Similarly, the engageable surface of the flywheel of Pub. '542 inherently has a predetermined run-out in order to engage and disengage with the clutch disc in the same manner as applicant's engageable surface. See applicant's admission on pages 1 and 2 of the specification.

Finally, contrary to applicant's remarks, the concepts recited in the "so as" clause of claims 17 and 19 flow directly from the teachings in Fig. 4 of Pub. '542. This figure plainly shows the enforcing member 24 for the plate 2. The examiner is mindful that: 1) the terms such as "smooth engagement" in applicant's "so as" clause are relative terms which depend on subjective determination of each individual; and 2) applicant's claims are not process claims, thus, the "so as" clause which merely recites the inherently result of the structures already set forth in the body of the claims is accorded insignificant patentable weight. In re Lamb, 64 USPQ 241 (CCPA).

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION

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IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Luong whose telephone number is (703) 308-2308.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-2168.

Luong/js
October 04, 1991


VINH T. LUONG
PRIMARY EXAMINER
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